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Vol. XL No. 7

ALBANY MEDICAL ANNALS

Journal of the Alumni Association of the
Albany Medical College

JULY, 1919

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Journal of the Alumni Association of the Albany Medical College

EDITED BY
J. MONTGOMERY MOSHER, M. D.

Published on the First of every month
Subscription Price, Two dollars per annum in advance
Advertising Rates given on Application

Address all communications to ALBANY MEDICAL ANNALS,
Albany Medical College, Albany, N. Y.
Entered as Second Class matter at the Post Office, Albany, N. Y.

Acceptance for mailing at special rate of postage provided for in section 1103, act of October 3, 1917, authorized July 31, 1918

Vol. XL, No. 7 — July, 1919

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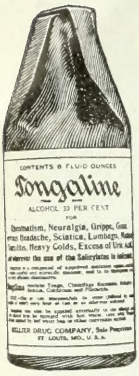

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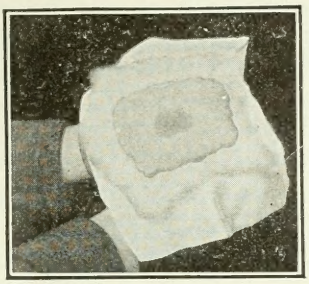

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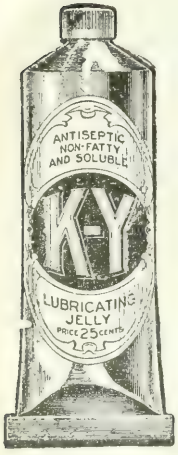

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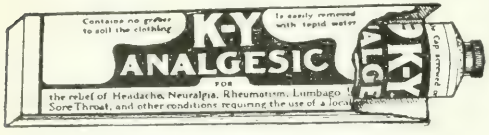
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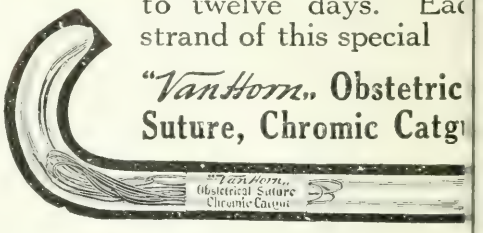

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VOL. XL JULY, 1919 No. 7

ALBANY MEDICAL ANNALS

Original Communications

MUNICIPAL CONTROL OF DIPHTHERIA, INCLUDING DOSAGE AND METHODS OF ADMINISTRATION OF ANTITOXIN.

Lecture delivered in the Post-Graduate Course in Infectious Diseases and Public Health for Physicians and Health Officers at the Albany Medical College, April 2nd, 1919.

BY FREDERICK W. SEARS, M. D.,

Sanitary Supervisor, New York State Department of Health.

The diphtheria problem presents itself in two distinct ways. The problem for the physician and the problem for the health officer. There should be no serious problem for the physician at the present time for we have every facility for diagnosis and treatment. There is only one treatment for diphtheria and that is antitoxin. Still in the minds of the laity and some physicians the early use of antitoxin has not been fully appreciated. No physician who has studied this subject would ever think of delaying the giving antitoxin in any case of diphtheria. The problem to the health officer is the only difficult one. It would not be so difficult if the physician would report his cases promptly. As soon as a child has a sore throat the family should report it to the physician. We are often not able to get at these cases early and in many cases no diagnosis at all and the result is they spread the disease before we have a chance to get them under control. So in speaking from a municipal standpoint the health officer's position is entirely different from the physicians. As health

officers we are not nearly as much concerned over the severe cases as we are over the mild ones. The severe case is put under quarantine and the mild one frequently is not. You will find in your work in schools and different institutions there is where your chief trouble lies, that is, with the missed cases, because we do not get them. In the severe cases we isolate and get them under control. We know that if we take cultures of every one in a healthy community we will find about one per cent of them have diphtheria bacilli in their throats, not all of which are virulent as shown by the virulence test.

In recent work in the army camps they found only about one in ten of positive culture showed virulence so that not all carriers are dangerous. If you take a culture in a community when diphtheria is present, you will find that the ratio is considerably larger. Five or six per cent are positive, especially in camps and institutions. It is not always the finding of the morphological germ of diphtheria which gives us such great concern. Then another problem which we have to contend with is reluctancy in giving antitoxin early. Schick has shown us why we should give antitoxin early. He has shown us that antitoxin has no value after the toxin of the diphtheria has entered into the cell tissues. The only way by which we can expect the antitoxin to do any good is to catch the toxin while it is still in the blood current. We must give antitoxin in the early period otherwise much damage will be produced. I do not know how it is with you, but we have often heard it said that you must continue to give antitoxin so long as the symptoms are bad. If you give a single dose of antitoxin and give a large enough dose at one time, there is no use of giving any more at all. The only time you should give more is when you are in doubt as to whether you have given enough in the first dose. Give sufficient dose at the earliest possible moment.

The question comes up as to the method of administration of antitoxin. One of the things I want to take up today is to settle in our minds what we expect to do with antitoxin. Schick has worked out a very excellent scheme for dosage. He states that in 90 per cent of cases we should give 100 units for each kilogram of weight.

1 kilogram - 2 1/5 lbs., then 1000 units should be given to a child of 22 lbs.

Double that makes 2000 units for 44 lbs. weight.

4000 units for 88 lbs.

6000 units for a normal adult of 132 lbs.

For immunizing, use one half of therapeutic dose. In laryngeal and severe cases two to four times the amount is given.

I have found in my experience of a good many years that that is practically all that is necessary in a great majority of the cases. You give antitoxin in about that proportion and if you give it early that is practically all you have to do. This brings us back to one of the points in the history of antitoxin. I happened to be health officer of Syracuse very soon after antitoxin came out, and at that time while the majority of physicians were beginning to put a great deal of faith in diphtheria antitoxin, there were some notable exceptions,—among them was a doctor on the staff of the Willard Parker Hospital in New York City who opposed it. I went down to that hospital to see what the trouble was. I found that in his wards his cases were practically all laryngeal and, of course, giving the ordinary dose did not relieve them; he was justified in his conclusion. He later became convinced as to the value of antitoxin.

How shall we administer antitoxin? I think the method a very important point. If you have a comparatively mild case, perhaps it is as well to give it subcutaneously, because in some cases you wish the antitoxin to absorb rather slowly, especially if we are afraid of anaphylaxis; so in the mild cases the subcutaneous method is fully as desirable. If you wish to get a little more rapid absorption you had better give it in the muscles.

Here is another point which I do not think the majority of people understand. If you have a fulminating case and the patient shows severe toxaemia, don't hesitate to give it intravenously. If you are going to give it by the vein you want to be a little more sure that your patient is not going to react to horse serum. Now while this condition is very rare, I don't think we should ignore it. Just warm your antitoxin to blood temperature and inject it slowly into the vein and your antitoxin effect is immediate. I wish to caution you all to make careful inquiry

regarding asthma. You should always find out if your patient is an asthmatic, because danger of a quick anaphylactic shock is great in such cases. A death occurred recently in a little child in Syracuse,—the doctor had evidently forgotten or had not thought about it, but when he inquired afterwards he found that the patient was an asthmatic. It is always wise to find out if the person to whom you are going to give antitoxin is an asthmatic and especially if they are sensitive to horse odors. If a person is sensitive you can give about one-fifth to one-tenth of a cubic centimeter, wait twenty minutes and perhaps double that dose and wait three-quarters of an hour. By this precaution the chances are your patient will be completely desensitized and you can go on giving full dose.

Then there is another method by which you can easily tell whether a patient is sensitive to horse serum or not,— that is by taking one-tenth of a cubic centimeter of any horse serum product and injecting it intracutaneously as you would for the Schick test. If you inject this amount of ordinary horse serum and wait for an hour or two, you can easily tell whether that person is sensitive or not to the serum. There is no reason why you cannot give horse products in any case if you bear in mind these points. The most important, of course, is regarding asthma. You may never encounter this condition. It has only happened once in Syracuse to my knowledge but the fact that it does happen should put us always on our guard. As I said before, the above table is a fairly good basis for the dosage of antitoxin. Do not give it every three or four hours as some suggest. Give it early and give a single sufficient dose. You can gain nothing by using more antitoxin than is necessary to unite with the toxin circulating in the blood no matter how severe the clinical symptoms may be.

The next question is, what shall be our guide in releasing these patients? The State Sanitary Code prescribes that before release, you shall have two negative cultures from the patient taken not less than twenty-four hours apart, provided that these cultures are not taken under nine days from the onset of the disease. Two negative cultures taken in this way are not always a guarantee that the patient's throat is free from the active

bacilli. Until within a year or two, the State did not require any specified time for beginning the taking of these cultures for release. The result was there were a great many cultures taken on cases very early in the disease. They were released on two negatives and it was believed that there were a great many carriers released from quarantine. In looking over our records of cases, we found that the average time in which the diphtheria germs disappeared from the throat was about twelve days. This has been the experience in other cities. The Council has, therefore, fixed the period of nine days as the minimum for taking the final cultures. The object, of course, is to reduce the number of people who become carriers of the disease. New York City Board of Health has fixed twelve days as the minimum period for taking these cultures. There are a good many reasons why two negative cultures are not a sufficient guarantee as to the absence of the germs. I was interested to learn that at Camp Sheridan all cases of diphtheria from which two negatives were secured were obliged to have a third culture taken two weeks later, the patient being kept from the camp until this culture was shown to be negative. This is to my mind a very wise precaution. It was my practice while health officer of Syracuse not to allow school children to return to school within one week following the two negatives, nor to have attendants in hospitals and institutions return to duty until after the third negative culture, taken one week following the two negative cultures. Live bacilli have been found in sections of tonsils which have been removed from carriers. There is no doubt but that the crypts of the tonsils frequently hold active bacilli which are only expelled under certain conditions and do not show at other times. This brings us to the question as to what we shall do with carriers. This has been one of the hardest propositions that Dr. Brooks has had to deal with. What are we going to do when we find carriers? Books are full of the things which have been used to clear up the throats. I do not know of anything that has so far been tried that has done any particular good in clearing up those carriers. The only treatment, outside of surgical, that has done any good has been the careful cleansing of the throat and trying to bring the mucous membrane to a normal

condition. The methods, I believe, that have been most successful are the spraying of the throat with a little peroxide of hydrogen followed by irrigation with normal saline in order to bring the throat to a normal condition. The treatment, however, which has given the best result in all large communities has been the complete removal of the tonsils. In my own experience, this has been the only satisfactory method. The removal of tonsils and adenoids will clear up in a very short time most carriers. The germ is in the crypts. The little experience that I had in one of the hospitals in Syracuse two years ago was very enlightening on that subject. In one of our hospitals in Syracuse, a hospital of fifty beds, diphtheria broke out, the first patient being an interne. We immediately cultured those he had been in contact with and found one nurse whom we took out and the trouble cleared up. It went on three or four weeks beyond the period and it broke out again in two of the nurses. I decided to culture every one in the hospital, and found that we had five people who showed positive cultures. One a cook, one maid, two nurses and one ward patient. We simply took those out of the hospital and isolated them. None of them were sick. We sent them up on the hospital grounds where they were out on the lawn having a good time. When the question came to go back, the patient went home and I required the cook, maid and two nurses to wait a week and come to the laboratory and have another culture taken. I told them if they were all right at the end of the week after the culture was taken they would be allowed to go back to work. One nurse was all right and went back, the other nurse was positive and was sent to her home to clear up. Her throat did not become free from bacilli until she had her tonsils removed about a month later. The maid's throat was negative but the cook refused to have the third culture taken, preferring to give up her position rather than to submit to the culture. The Superintendent of the hospital, upon my recommendation, refused to take her back. She attempted to get employment in other places but had difficulty in doing so because she was unable to get a recommendation from her former place of employment. She came to Syracuse five months later and applied for her old position. We still made the same

requirements regarding culture. Culture taken at that time was still positive. Her throat was apparently perfectly normal, yet she was harboring virulent bacilli for months.

For these reasons we believe people who work in hospitals, schools and food establishments should not be returned to duty upon the securing of two negatives. The removal of tonsils in the majority of cases clears up the condition very quickly.

The question has been frequently asked: Is it not dangerous to remove the tonsils in the presence of active diphtheria bacilli? We are able to answer that in the negative if the patient has passed the acute inflammatory condition. The bacilli have done their harm so far as the patient is concerned. If you are suspicious that it might be dangerous to remove these tonsils under these conditions, all you need to do is to precede the operation by a dose of antitoxin. Dr. Halstead of Syracuse relates a very interesting experience in this respect which happened before the days of antitoxin. In a severe case in which a child with diphtheria was threatened with suffocation. The question arose whether he should remove the tonsils which he believed were producing the symptoms by mechanical obstruction, or to do a tracheotomy. He reluctantly decided to remove the tonsils even though the condition was an active one. The patient made a good recovery, showing that this procedure is not dangerous even under adverse conditions.

Another question which we are frequently asked is: What is the effect of giving antitoxin in clearing the throat of carriers? None whatever. Antitoxin is simply the destroyer of toxin in the blood, and inasmuch as in the case of the carriers, we are only dealing with the bacilli in the throat over which the antitoxin has no control, we cannot expect nor do we get any beneficial results from its use for this purpose. The only instance in which we would get results from antitoxin would be in cases where we find a positive culture, in cases without clinical symptoms where we have secured the culture before the actual disease has begun.

The next question is with regard to the virulence test. Most laboratories are unwilling to make frequent virulence tests. We can readily understand why. In the first place, it is a tedious

process to isolate a pure culture which must be done. Secondly, many guinea pigs must be sacrificed in making these tests. As a matter of fact virulence tests for cases which have been clinical practically always show virulence. For this reason the laboratory will want to know when you send in a culture, as to whether the case is a clinical one or simply a carrier as found by taking a large number of routine cultures. It is, therefore, necessary in sending cultures with the request for this test that you explain clearly your reason for wishing it. For instance, it happened in one of the towns in my district last year, that an efficient, though very zealous nurse, took cultures from all the school children, there having been only one or two clinical cases in the neighborhood. She found a large number of carriers, with the result that when the carriers were isolated, a storm of protest resulted. She undoubtedly had many non-virulent cases among those reported. We do not advise taking routine cultures except for fairly good reasons. This brings us to the matter of control of diphtheria in schools. I have some pretty definite ideas from experience as health officer and sanitary supervisor regarding our method of controlling this disease among school children. If you have but one case in a school, I do not believe it calls for a complete culturing of the entire room. If you have but one case, it may be a casual case which has been brought in. This disease, we know, is transmitted either by direct or indirect contact and not through the air as the laity usually believe. It is, therefore, advisable to take cultures of those who are nearest to the actual case, that is, the one sitting on either side and the one sitting in front or back of the patient. In one instance the health officer told me that he found three of these four patient with no others in the room. If following the first case, you find other scattered about the room, or find suspicious cases upon inspection, it is wise to culture all children in the room and isolate the carriers. The carriers in this case are probably of the virulent type. Eliminate the carriers, keep your school open, have daily inspection of children and be sure the nurse looks up the absentees. Three years ago at Gouverneur, there were thirty cases in one school, the school was kept open. Upon culturing the entire school, we found these cases in groups, showing plainly the

cause was from contact. I think with rare exceptions the school should be kept open, look out for your moving picture shows and Sunday schools. I would close schools under certain conditions but it would be the last place in the community that I would close. When children are in school and you have a good nurse, you have these children under your control, you can take your cultures of suspicious cases, isolate the cases, follow up the absentees and you know where your carriers are. If you close the schools and allow the children in moving picture houses and other public places, they will do much more damage than when kept under your inspection. Other problems are,— what we shall do in large institutions, as orphan asylums, etc. The methods used are similar to those used in our schools. In addition we should learn those who are susceptible and those who are not which is very easily found out as Dr. Lawrence will tell you. In large institutions we should resort to the Schick test as this is a very simple procedure and gives most valuable information. Make the Schick test on all the inmates and you will then know positively those who are susceptible to the disease. These latter can be temporarily immunized with antitoxin. Cases showing the negative Schick, rarely if ever, develop diphtheria. The percentage of the various age periods which show a negative Schick are as follows:

At birth, 93 per cent, one to two years, about 57 per cent, twenty to forty years, about 76 per cent, from five to fifteen years, about 50 per cent.

Only last week, diphtheria appeared in Auburn prison. I talked the situation over with the prison physician who had immunized about 400 prisoners with antitoxin. I advised that he do the Schick test and only use the antitoxin for those who showed that they were susceptible to the disease. On last Monday I personally administered the test to 249 inmates. Fifty-five were positive.

In an institution the Schick test is probably the most scientific method of learning the true situation. You can take these tests and tabulate your cases for future observation. By this method you may save a large amount of antitoxin. A negative Schick

does not prove that the person may not be a carrier. We, therefore, should take cultures the same as in the other cases.

Another point which I wish to bring out is regarding the treatment of carriers. Of course, you have to isolate them. The code requires that carriers shall not handle food or be employed in positions which require their contact with children. After five or six weeks, however, they may be allowed to work under certain conditions.

In Camp Sheridan the carriers were allowed to go to work if physically able, provided they wore masks. This would be difficult to carry out except in army camps. Personally, I believe it would be safe to allow whooping cough cases to go to school if they wore masks.

What is the advantage of the masks? It prevents the saliva from carrying infection by coughing or sneezing and keeps the fingers of the patient out of the mouth. This latter, to my mind, gives a very good reason why attendants on these diseases should wear masks.

In the question of disinfection, there is little difference between diphtheria and other diseases. It is well to caution the attendants regarding everything which has come in contact with the nose or throat secretions of the patient. It is better to allow the patient to throw the soiled handkerchiefs or gauze into an open paper bag which can be burned.

We will now give a few moments for questions.

Q. 1: How long did it take for a subcutaneous injection of antitoxin to absorb?

Dr. Sears: You get some effect almost at once, but you do not get a complete absorption under from twenty-four to thirty-six hours.

H. O. Q. 2: In the table in reference to dosage, do you use that on the first day, do you double the dose the next day, or is this unnecessary?

Dr. Sears: For the average case the one single dose is sufficient. The mild case does not progress very rapidly.

H. O. Q. 3: In reference to clinical diagnosis, don't you think it a good thing to urge physicians to give the antitoxin upon the clinical diagnosis?

Dr. Sears: Yes, if you have a case and cannot get a report of culture within a few hours, you should always do this as no harm will be done. You can always save time and perhaps save a life by giving the antitoxin early. I do not believe we should ever consider a case of sore throat as not being diphtheria until we have proved it by culture. There is no physician so skillful that he can always diagnose diphtheria by looking at the throat. You should take a culture of every suspicious case. When we can bring the laity to this view, we will accomplish a great deal in the management of diphtheria.

H. O. Q. 4: A physician said he had a boy whose brother had diphtheria, he had given 500 units of antitoxin two or three weeks before. The physician said in his judgment it was dangerous to give antitoxin to the child because he was sensitized.

Dr. Sears: To my knowledge this has never been known in a human being. It is a common occurrence in animals to be sensitized in this way.

H. O. Q. 5: My nurses find more nasal carriers than any others.

Dr. Sears: Nasal carriers are perhaps the greatest spreaders of the disease. In one of our hospitals in Syracuse the chief physician and several nurses contracted the disease from one such carrier.

H. O. Q. 6: Does antitoxin cause paralysis?

Dr. Sears: Absolutely not. The reason why we have had more paralysis in cases since the use of antitoxin is because in a large number of cases, the antitoxin has saved the life of the patient, although too late to save him from paralysis. Therefore, many of the cases which have shown paralysis would have died without the use of antitoxin.

Dr. Brooks: Another point that occurs to me and that is in regard to taking release cultures.

Dr. Brooks: You have explained about the possibility of cultures taken under satisfactory conditions of two negatives not being sufficient. Under ordinary conditions the release cultures are taken by the attending physician. In the first place a great many of them we know have a rather vague idea as to how a culture should be taken. I have seen a good many intelligent men

who do not have the slightest idea. Another point which is perhaps more important is that just as soon as the case has recovered the attending physician's responsibility ends. He is not going to go back and take release cultures. He is going to get through with it just as soon as possible. I have seen in at least one outbreak of diphtheria a large number of carriers where the release cultures have been taken by the attending physician. The point is where it is possible, perhaps where you have a public health nurse, it is always better to have all the release cultures taken by a representative of the health officer. Any intelligent public health nurse can be taught to take cultures and take them as they should be taken.

Dr. Sears: I think that point is a very strong one because the general impression among people is that anybody can take a culture but this is not true. They make a jab at the throat, do not get a satisfactory culture and then blame the laboratory for the result. I believe carriers clear up more quickly if they can be kept out in the sunlight as this favors the bringing of the mucous membrane to a normal condition.

Health Officer: Last winter an organization from Indiana came into our city and flooded it with circulars against serum and I had quite a siege with them.

Health Officer: I can answer that — have your city draw up an ordinance that would effect that with a penalty. I tried that a year ago. I submitted it to our attorney general and he drew up a clause and added it to our ordinance and our patent medicine man soon moved out.

Dr. Brooks: It seems to me that in an emergency you could have an injunction.

THE SCHICK TEST AND ACTIVE IMMUNIZATION.

Lecture delivered in the Post-Graduate Course in Infectious Diseases and Public Health for Physicians and Health Officers, at the Albany Medical College, April 2, 1919.

By JOSEPH S. LAWRENCE, M. D.,

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I think that my subject was "The Schick Test and Active Immunization." I have chosen to reverse it and speak first on immunization, for the Schick test is simply a test of immunization. I have outlined here a sort of scheme that would practically take up the work where I left it the other day, and follow it on until a fully immunized person is attained.

First the bacteria we spoke of are all capable of doing harm to the tissues, sometimes because of their efforts to grow and multiply, other times because of a poison they manufacture. We must remember, however, there are bacteria that help to build up tissue as well as there are others that tear it down. The typhoid bacillus can be an example having both of these qualities; they burrow holes through the intestinal wall and also seem to manufacture a substance which stimulates fat production.

But today we are vitally interested in their power to produce poison or toxin. You recall we spoke of pathogenic and non-pathogenic bacteria. All pathogenic and most so called non-pathogenic bacteria produce a toxin we now know. In some instances this toxin is excreted while the germ is still alive as is the case with the diphtheria and tetanus organisms. We speak of this toxin as being extra cellular. There is another variety which keeps the toxin within its cell and only when the cell is dead and disintegrates is the toxin liberated. We speak of this toxin as endotoxin because it is intra-cellular. These germs may secrete a toxin while living but this is usually of minor importance as compared with endotoxin. The typhoid bacillus is a type of this group.

Characteristics of toxin and endotoxin. They are both proteins. Toxin has an attractive force for any protein. This property is utilized sometimes when we give plain horse serum or rabbit or chicken serum to free the blood from toxin as for example in

some methods advocated for treating rheumatism. The toxin secreted by the bacteria is readily soluble while the endotoxin is difficultly so.

Thermolability. Both toxin and endotoxin are destroyed by heat at a temperature of about 80° C. In this they differ from chemical toxins which are not affected by heat.

Biology. The body cells respond differently to these poisons than they do to chemical poisons. If not entirely killed they produce an antibody which fixes the poison. These antibodies are produced in abundance and when not used by the toxin they are given off by the cell and circulate free in the blood. They remain in the blood serum when the blood cells are coagulated off. A blood serum filled with these antibodies is called antitoxin when it has a specific purpose as the serum from horses injected with diphtheria toxin. When the blood is loaded with antitoxin and takes up the toxin that might arise from a growth of bacteria without allowing a reaction in the person we say the person is immune to that infection, that is, the blood serum contains at all times sufficient antitoxin to neutralize the toxin introduced by that type of infection.

The damage caused by a certain amount of toxin may not always be the same in extent. This can only be explained by showing that the toxin rapidly degenerates and loses a part of its virulence. This degenerated part is called toxone. Both toxin and toxone unite with antitoxin, toxone more rapidly than toxin. This knowledge is of value when we administer antitoxin. Large doses are necessary or too much will be fixed by the toxones while the toxin will continue its action.

Standardization. Before we can use antitoxin, we must know what is a dose. This is determined for diphtheria antitoxin by producing a toxin by growing diphtheria bacilli in veal broth, filtering off the organisms and taking that amount of broth which contains enough toxin to kill a 250 gram guinea pig in four days as the standard minimum lethal dose (M.L.D.). Titrating this amount of toxin against antitoxin we shall find how much antitoxin is necessary to neutralize this definite amount of toxin. The unit of antitoxin is theoretically that amount which exactly neutralizes 100 M.L.D's. of toxin.

Immunity. There are two kinds of immunity, natural and acquired. Natural immunity is that which we normally develop as we go through the world year by year and embraces protection against a variety of organisms. After the age of five our chances of developing a case of diphtheria decrease because our natural immunity is increasing.

Acquired immunity can be of two types, passive and active. Passive immunity is obtained by injecting into the blood stream antitoxin enough to fix the free toxin, as in treating a case of diphtheria. This immunity is transient and may entirely disappear within a month after being established.

Active immunity may be achieved in two ways. The first and most common way is to have the infection, as, the immunity established by an attack of typhoid fever. The second method is to treat the person with a mixture of toxin and antitoxin. The mixture at first being entirely neutral. Three doses are given. The three doses may follow each other at seven day intervals or a month may be allowed to elapse between the first and second doses. Dr. Zinger recommends this method.

The injection should be made subcutaneously rather than intravenously so that the toxin may act for a longer time before being finally excreted. This method of establishing immunity is particularly valuable in connection with doctors and nurses. It is also recommended to immunize school children at an early age by this method. The immunity thus conferred seems to be quite permanent. Park and Zinger report no depreciation in three years.

Schick Test. This brings us to a consideration of the Schick test. We have always known that not all persons exposed to diphtheria contract the disease, but how to tell who were immune was not known and therefore antitoxin in prophylactic doses was administered to all exposed at the time of an epidemic. The technique of the Schick test is very simple and its results are most important. By this method it is possible to determine in thirty-six hours if an individual is susceptible to diphtheria or not. Outfits are now being issued containing the toxin and salt solution necessary to make up the proper mixture for performing the test. An amount of toxin equal to one-fiftieth of an M.L.D. is

diluted with one-tenth cubic centimeter of sterile salt solution and injected intracutaneously into the skin of the forearm. When properly done this injection produces a small white wheal which in twenty-four hours becomes a red spot. If the individual is immune the slight inflammation passes away as quickly as does the control which was produced on the opposite forearm by injecting the same amount of toxin that had been heated above 80° C. for three minutes. If there is no immunity the inflamed area increases until after forty-eight hours has elapsed when it slowly disappears. After eight or ten days the spot turns brown and desquamates.

This test has great value in controlling an epidemic in schools, hospitals or communities by showing who should be immunized and observed. Care must be exercised in performing the test for if the injection be made too deep the result will be negative.

THE CLINICAL COURSE AND TREATMENT OF VINCENT'S ANGINA.

By CLEMENT F. THEISEN, M. D.,
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While it is now an accepted fact that the finding of the fusiform bacillus with the spirillum or spirochete, in smears from throat swabs, makes the diagnosis of Vincent's angina easy and positive, it must be remembered that this bacillus is not the specific organism of Vincent's angina only, but is found also in cases of mastoiditis, broncho-pneumonia, diphtheria, hospital gangrene, throat syphilis and stomatitis. Cultures and smears usually show mixed infections with other organisms such as the Klebs-Loeffler, pneumococcus, streptococcus and staphylococcus. Mistakes in diagnosis are sometimes made because only cultures are taken, and not throat swabs. The diagnosis is easily confirmed in Vincent's if smears from the throat swabs are examined microscopically. The fusiform bacillus is practically always associated with the spirillum or spirochete. The spirochete is a thin spiral from six to twenty microns long, and two to four microns wide. The fusiform bacillus is a rod-shaped organism

from four to twelve microns in length, and two to six microns in width. Both these organisms flourish around decayed teeth, in diseased tonsils and in ulcers. Both organisms stain readily, among the best reagents being methylene blue, carbol-fuchsin and gentian violet.

The writer has always been of the opinion that bad teeth, with the attending spongy condition of the gums, are among the most important etiological conditions in cases of Vincent's angina. If cases are seen from the onset, before ulceration takes place, the entire clinical course of the disease can be studied. A thin grayish pseudo-membrane forms on the gum, particularly around a decayed molar and extends to the tonsils, and often to the mucous surface of the cheek. In a few days, unless treatment is immediately effective, a superficial ulceration forms under the membrane, and in some cases there is swelling and tenderness of the cervical glands on the same side. In the favorable cases, and if radical treatment is promptly started, the condition can be limited to one side, although in many cases it becomes bilateral.

The onset of the disease is fairly sudden, being sometimes ushered in with a chill and temperature elevation. In children this often reaches 104° and 105° F. In adults the temperature does not run as high as a rule, except in the worst type of the disease, with deep destructive ulceration. In this class of cases there is also very marked prostration, with headache and very painful deglutition. This is at times so severe that it is difficult for the patient to get sufficient nourishment. Suppuration of the cervical glands is rare, but has been seen by the writer.

In the favorable cases, the mild form, the course of the disease is not longer than from a few days to two weeks. Recurrences, in the same patient, are not unusual, and are mainly caused by neglect in correcting the underlying causes, dental caries, diseased tonsils, pyorrhoea and improper care of the mouth generally.

Halsted, in his very complete paper (Trans. A.L.A.,1912), states that there are two distinct clinical types of the disease, the one form to be differentiated from diphtheria and other nondiphtheritic pseudomembranous anginas, while in the other form localized ulceration simulating syphilis very closely is present.

In the writer's experience, the second type mentioned by Halsted occurs almost exclusively in adults, while almost all authors agree that the first type, simulating diphtheria and other membranous conditions, particularly those in which the streptococcus predominates, is far more frequent in young people.

This seems to be the simplest and best classification, although many departures from the usual clinical picture occur in both classes. The one constant symptom is the peculiarly offensive and distinctive odor, which in the severe ulcerative form is almost unbearable. The diagnosis can almost be made by that alone. The fact, that the type of the disease in children so closely resembles diphtheria, accounts for many of the mistakes in diagnosis, because in this type, cultures only are examined, and not smears from throat swabs.

In the Michigan State Laboratory, in 1909-10, out of six hundred and eighty-seven throat swabs sent in to be examined for diphtheria, one hundred and seventy-eight were not cases of diphtheria at all, but proved to be Vincent's angina. A clinical diagnosis of diphtheria has been made in two hundred and twenty-four of the six hundred and eighty-seven cases, but the bacteriologic diagnosis proved that only one hundred and twenty were true diphtheria cases.

Forty-six of the cases clinically diagnosed as diphtheria proved to be Vincent's angina.

Vincent himself found the disease in two per cent of all cases of membranous anginas.

Lublowitz found the specific organism in six out of thirty-eight cases of ulcerative stomatitis.

Rodella found them in about one-third of all the pseudomembranous anginas he examined.

Cases of bronchitis have been reported by Rothwell (*Journal of the American Medical Association, Vol. LIV., 1910*), in which the main organism found was the fusiform bacillus.

Fatal cases are not as uncommon as is generally believed, and in children, some cases, in which a diagnosis of laryngeal diphtheria has been made, and in which the Klebs-Loeffler bacillus was not found, were undoubtedly cases of the ulcerative type involving both the pharynx and the larynx. These cases are al-

ways serious, and in children, when a pseudomembrane is also present in the larynx, are sometimes fatal.

Three fatal cases have been reported by Bruce, and others by Meyer and Halsted.

The clinical course of the disease may be best given perhaps by a brief description of two typical cases seen by the writer, one unfortunately having a fatal termination.

The first case, that of a child, aged three years, was seen from the beginning, and was of the mild pseudo-membranous form closely resembling diphtheria. The attack started with a chill, headache, malaise, and a sharp temperature elevation. Inspection of the throat showed a grayish membrane covering the left tonsil and part of the soft palate on the same side. The odor was typical, so no culture was taken, but smears showed the typical microscopical picture. If the writer had not seen so many cases of Vincent's, diphtheria would possibly have been suspected, and valuable time in starting proper treatment lost. Cervical glands enlarged and tender. The membrane could be brushed off, and underneath there was a superficial ulceration. The treatment, which will be described later, and which is always used by the writer, was started at once, and the child had a normal throat in four days. Smears taken again at this time, were negative, no fusiform bacilli nor spirilla being found.

The writer is of the opinion that all cases of Vincent's, if they could be seen from the onset, are simple and yield to treatment readily.

The severe ulcerative and fatal cases, were either not seen early enough for treatment to be effective, or as often happens, did not consult a physician until the disease was far advanced.

The disease, if not treated promptly, or if treated for some other throat condition, advances rapidly to deep destructive ulceration, often involving the entire pharynx and adjacent mucous surfaces. Most cases start, I believe, as mild pseudo-membranous forms of the disease.

The other case, was of the worst ulcerative type, and demonstrated the result of neglect of treatment. This case terminated fatally. The patient, a man, aged 31 years, walked into the office with the history of having had a sore throat for several weeks.

The odor, when the patient opened his mouth to have the throat examined, was overpowering and almost unbearable. He stated that he had received no treatment at all, and had been able to take very little nourishment for over a week.

The ulcerative process, which had evidently been going on for some time, had destroyed the soft palate, both tonsils, and there were deep ulcerations on the mucous surfaces of both cheeks and the posterior pharyngeal wall. The gums, around the last molars, which were decayed, were also badly involved. The cervical glands were large and tender. Temperature 103° F., pulse 120 and of bad quality. Patient appeared deeply toxic and was very weak. Smears from throat swabs showed the typical microscopical picture of Vincent's. He had an acute nephritis, the urine being loaded with albumen and casts. I told his family that their was little hope, and in spite of the most vigorous treatment, he died about ten days after I saw him. No autopsy was permitted. The cause of death, as it usually is in fatal cases, is the result of extreme exhaustion, toxaemia and starvation. It is impossible for patients, having such extreme ulceration of the mouth and fauces, to receive sufficient nourishment. I have no doubt that this patient's life could have been saved, if he had been seen when the disease started.

Two other fatal cases have been reported by the writer (*Transactions of the American Laryngological Association, 1918*).

There is an intermediate form of the disease between the simple pseudo-membranous form, seen usually in children, and the destructive malignant type just described. In this variety, which has usually been going on for a week or ten days, before seen by a physician, the ulcerative process is not nearly as extensive. It may be confined to only one tonsil and the mucous membrane in the immediate vicinity, or both tonsils may be involved.

These cases, while not as favorable for treatment as the simple form of childhood, practically always get well, but run a much longer course than the cases that are treated from the beginning. Both the malignant and the intermediate less serious forms, resemble the ulceration of throat syphilis so closely that mistakes in diagnosis are easy. In fact many of these cases are treated for syphilis at first. Cases occur in which there is a combination of

syphilis and Vincent's, the Vincent's probably developing in the syphilitic ulcers. The writer has seen this combination, with a positive Wassermann, and the clinical and miscroscopical evidence of Vincent's.

Treatment.— It is of course well known that arsenic in some form has almost a specific action in some cases. Salvarsan locally and intravenously, in bad cases, is of great service, and Potassium Iodide internally is a good adjunct to the local treatment.

Halsted, in the paper before mentioned (*Transactions of the American Laryngological Association, 1912*), has had good results with the use of enesol, an arsenate of mercury used hypodermically. Local applications too numerous to mention, have been recommended by different authors.

The writer has found that a strong solution of potassium chlorate, powdered alum, carbolic acid, glycerine and water, is almost a specific in some cases, and clears up the throat lesions quicker than anything else. It is used as a gargle, for adults and children old enough to use gargles.

In very young children it is used as a spray, the strength of the solution varying with the age of the patient.

After an attack, the mouth should be carefully examined, and all bad teeth and diseased tonsils removed.

Proper care of the mouth and throat is of the greatest importance. A twenty per cent alcoholic Seilers or Dobell's solution, if used several times daily, will not only prevent attacks of Vincent's angina, provided of course that the usual predisposing causes have been removed, but will go far in rendering immunity for most all anginas and other infectious throat conditions.

The strong carbolized astringent solution above mentioned, will in the writer's opinion, if used early, clear up the throats in cases of Vincent's more quickly than any other method of treatment. It should be used very frequently, every half hour in the severe cases, and every hour or two in the milder cases. After a few days, if the throat lesions show a tendency to clear up, it is used less frequently.

Vincent's angina is really a very common condition, and if we are on the lookout for it, will be found much more frequently than we think.

HIGH FREQUENCY ELECTRICITY IN THE TREATMENT OF ROSE COLD AND HAY FEVER.

Excerpt from a paper, "Some Points on Electro-Therapy," read before the Medical Society of the County of Albany, May 16, 1918.

By WM. G. LEWI, M. D.
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The subject of Rose Cold and Hay Fever is so timely that I am sure that you will be interested to know the results I have had in treating these cases with high frequency electricity.

Some years ago Sajous applied the term "hyperaesthetic rhinitis" to the conditions then, and still, designated as Rose Cold and Hay Fever. As a result of my experience in treating these conditions, and taking into consideration the results obtained, I am convinced that his designation is a perfect one, for the very good reason that the excellent results have been attained by attacking the conditions at the source that his designation would indicate—viz, the sympathetic nerve system. According to the studies of Sajous, Mackenzie and others, and of the results of my practical personal experience in treating these cases, there is little doubt that, as Mackenzie has said, "the neurotic factor is due to abnormal excitability of the sympathetic system;" and my own experience shows that treatment of the sympathetic nerve system corrects this "abnormal excitability" and results in a cure in a greater percentage of cases than any other method of treatment.

As to etiology, Sajous assigns three prime causes: (*a*) an organic disorder of the nasal mucosa; (*b*) general nervous debility; (*c*) an external irritant. If, for the first of these causes, "An organic disorder of the nasal mucosa" we substitute "A functional disorder of the nasal mucosa due to abnormal functioning of the sympathetic nerve," we would, I believe, be nearer the truth.

The sympathetic nerve system controls the secretory epithelium and the unstriated muscular fibres. The first is here of interest. Again quoting from Sajous: "I do not regard hay fever in its active form as a disease per se, but merely as a symptom-com-

plex of a sudden cessation of the inhibiting functions of the nerve centers presiding over the physiological processes of the upper respiratory tracts." If we can reestablish this "cessation of the inhibiting functions of the nerve centers, etc.," we will have removed the cause of the condition and a cure will have been effected. And it is just this that we have been able to do in over eighty per cent of the cases of Rose Cold and Hay Fever treated along these lines.

In those cases where the mucous membrane of the air passages is affected by various irritants,— pollens, etc.,— producing Rose Cold, Hay Fever and certain forms of asthma, we assume that the characteristic irritation is made possible by reason of a perverted secretion of the mucous membrane epithelium, due either to a "cessation of the inhibiting functions of the nerve centers" as Sajous says; or to "abnormal excitability of the sympathetic system" according to Mackenzie.

By producing a high frequency hyperaemia over the sympathetic nerve we are able to stimulate the nerves to more normal action, bringing about a more normal secretion from the secretory epithelium, and making it resistant to those substances that had heretofore been irritating, and relieving any irritation of this character that may already be present.

For the surest and quickest results the treatment should be instituted about two weeks before the date of onset. Where treatment is begun after the onset the results are equally satisfactory, but a short time—a few days—is required to control the already present inflammation. It is surprising, however, how quickly the subjective symptoms are controlled by the high frequency treatment.

It is well to bear in mind that many cases of recurrent Rose Cold and Hay Fever cease having the attacks without any treatment. In these cases of spontaneous relief, we assume that the cause has been removed; that is, the sympathetic nerve has ceased to functionate abnormally—has resumed its normal functioning. In the idea here briefly outlined for treating these cases our object is simply to do that which nature has failed to do. To attempt to cure, by medical means, any condition that is not at some times relieved spontaneously, is to my mind futile.

In all of the conditions in which we are able to give relief or effect a cure by specific medication or otherwise, statistics show that we are able to *increase* the percentage of cures, and *lower* the percentage of cases of continued chronicity or fatalities, according to the condition under treatment.

Before the discovery of the antitoxin, and when the treatment consisted solely in caring for the general condition of the patient, diphtheria demanded a toll of thirty-seven per cent of all cases. Since the use of diphtheria antitoxin has become general, we are justified in expecting recovery in one hundred per cent of the cases that are recognized during the first twenty-four hours. But even before the advent of the specific antitoxin, sixty-three per cent of the cases recovered. The conclusions to be drawn from the foregoing is obvious.

In conclusion, I shall cite a few cases.

Miss P. For twelve years this patient had suffered from Hay Fever, which persisted from the fifteenth of August until the first frost. At any time the odor of lilacs brought on an attack of sneezing and asthma. During the season that I first treated her, four years ago, she had so few symptoms that she was able to attend to her usual duties, previously impossible. She has had no treatment since and has been free from all symptoms.

Mrs. M. Was called to see this patient at 10 P. M. Asthma with extreme dyspnoea, associated with Hay Fever. Patient was unable to lie down. Gave codeia for the night, which gave only partial relief. The following morning, after much urging on my part, she came to the office in a taxi and had difficulty in getting up the steps. The following morning she came by trolley and by the third day was entirely free of all asthmatic symptoms, with great amelioration of all other symptoms, and was all right after three days more.

Mrs. C. Told me casually that she dreaded the coming month, as it always meant a period of invalidism because of Rose Cold. She demurred at taking any kind of treatment, as she had tried so many things without any relief. She did finally present herself for treatment and sneezed three times that season. Did her own canning that spring, for the first time in twelve years. Has had no recurrence in the three following years.

Many more cases could be cited, but these few will show, as well as many more, the practical side of the question. I should like to treat some cases that have had attacks for many years a

few months before the seasonal attack; for from my observations on the persistence of the good effects on those who had no recurence in the years following treatment it seems reasonable to suppose that treatment given between attacks would tend to make the action of the sympathetic nerve more normal for a long period of time, and prevent the characteristic attacks.

Editorial

These are to give Notice, That at the Glass-Lanthorn in Plough-Yard in Gray's-Inn-Lane, still lives Susanna Kirleus, the Daughter of that Eminent Doctor Tho. Kirleus, (who was a Sworn Physician to K. Charles II. &c) who with his famous Pills and Drink cures the secret Disease, and all Ulcers, Sores, Swellings, Kings Evil, Scabs, Itch, Scurfs, Scurveys, and Leprosies, though never so great, without hindering Business, or the Use of Mercury, which destroys many; and cures any who send their Grief and Age without seeing them, having had above 20 Years Experience in the Doctor's Life time. The Drink is 3s. the Quart, the Pills 1s. the Box. She gives her Advice in Distempers, to all that write or come to her, gratis, and deals with all Persons according to their Abilities.

The Spectator. No. 304. Monday, February 18, 1712.

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The Commencement Season. Separation of the graduating ceremonies from the alumni reunion necessitates a commencement program covering two days. Last year for the first time the diplomas conferring the degree of Doctor of Medicine were awarded at Schenectady in common with the conferring of these honors upon the candidates from the academic departments of the university. The innovation was appreciated, was repeated this year, and appears to have taken its place as a permanent custom. The hope may be indulged that the schools of law and pharmacy will soon claim the same privilege. The dignity of a university commencement cannot fail of its impression upon the young men who regard this event as one of the mile-stones in their careers, and no effort is wasted which responds to the promise and prospect of youthful anticipation.

The Honorary Chancellor's address of 1918 was given by the Honorable Robert Lansing, Secretary of State, who analyzed the problems suggested by the World War, which at that time, was the engrossing topic of thought and apprehension. In 1919 this office was filled by Major-General Leonard Wood, whose address touched upon the difficulties, obligations and duties of citizenship resulting from the great upheaval of civilization. There can be no question that the influence of general discussions of this broad character is far more reaching than are the narrower admonitions, not altogether devoid of platitudes, by which the layman hopes to dissuade the youthful practitioner from the injudicious administration of pills. The commencement exercises at Schenectady are dignified, and it is with some complacency that the students and faculty of the Medical School find themselves in that time-honored procession from the "President's House to the Church," in line with the "Trustees and Candidates for Honorary Degrees, the Faculties, the Undergraduates and Alumni."

This arrangement of commencement for Monday leaves Tuesday for the Alumni, and the Executive Committee of the Association, abetted and aided by the Dean and Faculty, plan an entertainment to last throughout the day. As has been the custom from time immemorial the Alumni meet in the College in the forenoon and assemble for the annual session. This year, recess was taken for luncheon at the Colonie Club, and the Nominating Committee busied itself during this supposed period of retrenchment in canvassing the party to ascertain who might be persuaded to accept office. There seem to have been difficulties as the choice for the presidency fell upon an absentee, Colonel Thomas W. Salmon, of the Class of 1899, who has accomplished such wonderful work for his country in the neurological and psychiatric service abroad. Automobiles carried the guests to the Albany Hospital for a survey and for demonstrations during the afternoon, and in the evening the dinner at the Hotel Ten Eyck took on a new aspect in the informal presentation of a more or less technical subject. The Association was unusually fortunate in having as its guest Dr. Frederick W. Shattuck of Harvard introduced by his old friend and pupil, Henry Hun, who was

vociferously greeted by his former students. Dr. Shattuck has given attention to Industrial Hygiene, and envisages the great future of this problem not only in its economic aspects but in its demands upon medical schools. There can be little doubt that the suggestions of Dr. Shattuck will bear fruit in the near future in the admission of this study to a place in the curriculum. Professor Elting gave a word picture of armistice day in Brussels, and described in vivid phrase the pageant of that occasion, and President Richmond closed the evening in his usual felicitous manner, with an expression of enthusiasm for the future of the College, and of the mutual benefit to the College in Albany and the College in Schenectady, of their university relations. Dr. Richmond's remarks carried conviction that the half-century dream of a great university is fast becoming accentuated into a reality.

Public Health

Edited by Arthur Sautter, M. D.

Department of Public Safety, Bureau of Health, Albany, N. Y.
Compiled by William F. Fullgraff, Registrar.
Bureau of Vital Statistics.

Deaths for Month of May, 1919.

Consumption	16	Bright's Disease	9
Tyhoid Fever	0	Apoplexy	11
Scarlet Fever	0	Cancer	14
Whooping Cough	0	Accidents & Violence	9
Measles	2	Deaths under 1 year	15
Diarrheal Diseases	2	Deaths over 70 years	38
Pneumonia	8	Death rate	15.24
Broncho Pneumonia	4	Death rate less non-residents	12.28

Deaths in Institutions.

	Non-res.	Res.		Non-res.	Res
Albany Hospital	9	12	Public Places	0	1
Albany Hospital Camp	3	3	St. Peter's Hospital	3	6
Albany County Hospital	4	3	St. Margaret's House	1	2
Child's Hospital	1	0	Sacred Heart Convent	0	1
Homeopathic Hospital	4	6			
Federation of Labor				26	39
T. S.	0	1	Births		168
Maternity Hospital	1	2	Still Births		2
Little Sisters of the Poor	0	2			

Division of Communicable Diseases.

Typhoid Fever	2	Tuberculosis	26
Scarlet Fever	23	Mumps	30
Diphtheria and Croup	7	Pneumonia	36
Chickenpox	51	Influenza	53
Smallpox	0	Septic Sore Throat	8
Measles	159	Trachoma	1
German Measles	0		
Whooping Cough	4	Total	400

Number of days quarantine for scarlet fever:
Longest..... 31 Shortest..... 31 Average..... 31
Number of days quarantine for diphtheria:
Longest..... 32 Shortest..... 32 Average..... 32
Fumigations:
Rooms..... 97 Buildings..... 127
Milk bottles disinfected 414

Communicable Diseases in Relation to Schools.

	Reported D.	S.F.	M.
Public School No. 3	..	1	..
Public School No. 4	1	..	..
Public School No. 8	..	3	..
Public School No. 13	..	2	..
Public School No. 14	2	15	..
Public School No. 15	..	2	..
Public School No. 17	..	9	..
Public School No. 18	..	13	..
Public School No. 21	..	1	..
Public School No. 22	2	13	..
Cathedral School	..	10	..
Lady of Angels School	1	2	..
St. Ann's School	..	10	..

Miscellaneous.

Cards posted for communicable disease	149	Postal card returns received from doctors	121
Cards removed	121	Inspections and reinspections	165
Notices served on schools	274	Vaccinations	82
Notices served on stores and factories	5	Vaccination dressings	32
Postal card returns sent to doctors	181	Children examined for employment certificates	18
		Number of employment certificates issued	17

Tuberculosis.

Living cases on record May 1, 1919		881
Cases reported:		
By card	25	
Dead cases by certificate	2	27
		908
Dead cases previously reported	14	
Dead cases not previously reported	2	
Removed	31	
Died out of town	1	
Recovered	0	
Unaccounted for	0	48
Living cases on record June 1, 1919		860
Total Tuberculosis dead certificates		16

Non-resident deaths:		
Albany Hospital Camp	3	
C. F. L. Pavilion	0	
County Hospital	0	
St. Margaret's House	0	
City at Large	0	
Homeopathic Hospital	1	4
Resident deaths		12
Visits to cases of tuberculosis		19
Miscellaneous visits		7
Physicians visited		4

LABORATORY REPORT.

Diphtheria.

Initial Positive	31	Release Negative	66
Initial Negative	344	Unsatisfactory	6
Release Positive	45		
		Total	492

Sputum for Tuberculosis.

Positive	57	Unsatisfactory	0
Negative	145		
		Total	202

Widals.

Positive	3	Unsatisfactory	1
Negative	16		
		Total	20

Meningococcus.

Positive	0	Negative	0
		Total	0

Wassermann tests	205	Pathological examinations	1
Milk analyses	169	Gonorrhea examinations	29
Water analyses	0	Miscellaneous examinations	0
		Total examinations	1,118

DIVISION OF SANITATION.

Complaints	103	Reinspections	103
Inspections	99	Plumbing	19
Plumbing	31	Sanitary	84
Sanitary	68		

HEARINGS.

Hearings	1	Cases heard	1

Class of Cases.

Plumbing	1

Disposition of Cases.

Reinspection	1

DIVISION OF PLUMBING, DRAINAGE AND VENTILATION.

Inspections	90	Houses tested	12
Old houses	63	Smoke	0
New houses	27	Blue or red	6
Permits issued	37	Peppermint	4
Plumbing	30	Water test	2
Building	7	Houses examined	49
Plans submitted	7	Re-examined	89
Old buildings	2	Valid	26
New buildings	5	Without cause	23
		Violations	0

REPORT OF REMOVAL OF DEAD ANIMALS

Horses removed	8	Cats removed	77
Dogs removed	88		
		Total	173

DIVISION OF MARKETS AND MILK.

Public market inspections	23	Milk cans inspected	346
Market inspections	122	Milk cans condemned	0
Fish market inspections	9	Lactometer readings	194
Fish peddler inspections	0	Temperature readings	194
Slaughter house inspections	0	Fat tests	8
Rendering establishment inspections	0	Sediment tests	4
Pork packing house inspections	0	Chemical tests	0
Hide house inspections	0	Cows examined	420
Milk depots inspected	12	Cows quarantined	0
Stores inspected	0	Cows removed	28
Dairies inspected	25	Complaints investigated	4
		Milk houses inspected	25
		Poultry condemned	12 lbs.

Medical News

THE ALBANY GUILD FOR PUBLIC HEALTH NURSING.— STATISTICS FOR MAY, 1919.— Number of new cases, 268; classified as follows: Charity cases, 59; cases, moderate income, 58; metropolitan, 60; prenatal (no charge for calls), 24; dispensary social service, 66; tuberculosis, 25; cases carried from last month, 131; total number of cases under care during month, 399. New cases classified according to disease: Medical, 86; surgical, 18; obstetrical — (a) prenatal, 24; (b) confinement, 29; (c) maternity, 1; no diagnosis, 4. Disposition: Removed to hospitals, 10; died, 8; discharged cured, 72; discharged improved, 64; discharged unimproved, 0; discharged to other care, 30; to dispensary, 1; number of patients still under care, 123. Cases reported by: Physicians, 12; metropolitan agents, 40; patients, families or friends, 62; nurses, 20; Home S. S. Nurse, 2; other sources, 5; dispensary, 6.

Special Obstetrical Department.— Number of obstetricians in charge, 0; number of students in attendance, 0; number of new cases this month, 0; number of nursing visits, 0.

Visits of Nurses (all departments).— Number of visits with treatment, 1,031; number of social service visits, 288; number of prenatal, visits 86; number of tuberculosis visits, 187; number of other visits, 251; total number of visits, 1,843.

Metropolitan Report.— Number of metropolitan calls, 382; number of checks received for last month's calls, $297.60.

Dispensary Report.— Number of clinics held, 78; number of new patients, 62; number of old patients, 499; total number of patients treated during month, 561. Classification of clinics held: Prenatal, 3; surgical, 12; nose and throat, 7; eye and ear, 16; skin and genito-urinary,

8; medical, 9; tuberculosis, 0; venereal (included in skin), 0; lung, 8; dental, 0; neurology, 3; stomach, 0; pediatrics, 3; gynecological, 6. Special Tuberculosis Department.— Number of T. B. patients sent to hospital, 10; number of T. B. patients returned from hospital, 2; number of T. B. patients died, 10.

Red Cross Notes.— National Red Cross Headquarters has announced the formation in Paris, of the League of Red Cross Societies, the purpose of which is to unify the Red Cross organizations of the world in a systematic effort to anticipate, diminish and relieve misery produced by disease and disaster.

The objects of the League are: 1.— To encourage and promote in every country a duly authorized voluntary National Red Cross organization, having as purposes the improvement of health, prevention of disease and mitigation of suffering throughout the world and to secure the cöoperation of such organizations for these purposes. 2.— To promote the welfare of mankind by furnishing a medium for bringing within reach of all peoples, the benefits to be derived from present known facts, and new contributions to science, and medical knowledge and their application. 3.— To furnish a medium for coördinating relief work in case of great national or international disasters.

The control of the League will be by general council, composed of representatives of all members of Red Cross societies meeting at designated periods. A governing board of fifteen members will be chosen by the general council to direct the affairs of the League in the intervals between such meetings. Henry P. Davison of New York, formerly chairman of the War Council of the American Red Cross is chairman of the League's first Board of Governors. Other members of the board chosen thus far are: Sir. Arthur Stanley of the British Red Cross, Comte Kergorlay of the French Red Cross, Count Frascara of the Italian Red Cross and Professor Ninagawa of the Japanese Red Cross. Geneva will be the headquarters of the League and the world health program shaped at Cannes will be further prepared.

While it is expected that the League of the Red Cross will establish intimate relations with the League of Nations it should be understood that the Red Cross League being a purely voluntary, non-political non-sectarian, non-governmental organization, it has no statutory connection with the League of Nations or with any government.

Mr. Davison commenting on the Red Cross League said:

"The Red Cross societies of the United States, Great Britain, France, Italy and Japan have for several months worked incessantly through their representatives, to devise an agency which would adequately cope with the world problems of disease and disaster. We hope it will be universal in membership. From the outset it was clear to us all that there was no institution in the world so well adapted to this task as the Red Cross because of the peculiar hold which it has upon the hearts

of all peoples, irrespective of difference of face and religion; because of the amazing development of its powers in the recent war, because of the anxiety of its membership not to lose the opportunity for service when war service was no longer needed. It is generally believed that the health problems of the world can never be solved by doctors alone, but must enlist hearty volunteer coöperation of the peoples themselves; and no organization can mobilize the peoples of divergent views as can the Red Cross. For this reason the five largest Red Cross societies have united to bring about universal Red Cross coöperation.

American Association of Orificial Surgeons.— The 32nd Annual Convention of the American Association of Orificial Surgeons will be held September 15, 16, 17, at the Congress Hotel, Chicago. The forenoons will be given to operative demonstrations at the hospital. The program will be replete with addresses, essays and papers by prominent Orificialists.

Journal of Dental Research.— The prospectus of this quarterly has been issued, announcing "a journal of stomatology: devoted to the advancement and dissemination of knowledge pertaining to the mouth and teeth, and to their relation to the body as a whole. The editorial office is in the College of Physicians and Surgeons, 437 West Fifty-ninth Street, New York City. The Journal is further described as "a strictly scientific research magazine — something entirely new in dental literature" an assertion justified by its support by an endowment fund, and the editorial staff of dental, medical and biological investigators, constituted as follows:

FOR STOMATOLOGY AND DENTISTRY

M. T. Barrett, Philadelphia, Pa.; Elmer S. Best, Minneapolis, Minn.; T. W. Brophy, Chicago, Ill.; G. V. I. Brown, Milwaukee, Wis.; J. P. Buckley, Chicago, Ill.; H. E. S. Chayes, New York, N. Y.; Martin Dewey, Kansas City, Mo.; W. B. Dunning, New York, N. Y.; A. C. Fones, Bridgeport, Conn.; C. J. Grieves, Baltimore, Md.; T. B. Hartzell, Minneapolis, Minn.; Joseph Head, Philadelphia, Pa.; A. T. Henrici, Minneapolis, Minn.; T. P. Hinman, Atlanta, Ga.; P. R. Howe, Boston, Mass.; N. S. Jenkins, New Haven Conn.; J. M. Levy, New York, N. Y.; J. A. Marshall, San Francisco, Cal.; A. H. Merritt, New York, N. Y.; F. B. Noyes, Chicago, Ill.; Alfred Owre Minneapolis Minn.; W. A. Price, Cleveland, Ohio; M. L. Rhein, New York, N. Y.; R. H. Riethmueller, Montclair, N. J.; K. H. Thoma, Boston, Mass.; F. T. Van Woert, Brooklyn, N. Y.; J. L. Williams, New York, N. Y.

FOR THE MEDICAL AND BIOLOGICAL SCIENCES

Anatomy.— H. H. Donaldson, University of Pennsylvania; G. S. Huntington, Columbia University.

Anthropology.—Franz Boas, Columbia University.

Bacteriology.—I. J. Kligler, Rockefeller Institute for Medical Research; Charles Krumwiede, Jr., New York University and Bellevue Hospital Medical College; W. H. Park, Research Laboratory of the New York City Board of Health; L. F. Rettger, Yale University.

Biochemistry and Nutrition.—H. P. Armsby, Pennsylvania State College; E. B. Forbes, Ohio Agricultural Experiment Station; Otto Folin, Harvard University; Casimir Funk, New York City; William J. Gies, Columbia University; E. B. Hart, Wisconsin College of Agriculture; P. B. Hawk, Jefferson Medical College; E. V. McCollum, Johns Hopkins University; Lafayette B. Mendel, Yale University.

Endocrinology.—R. G. Hoskins, Northwestern University Medical School.

Evolution.—C. B. Davenport, Carnegie Station for Experimental Evolution (Cold Spring Harbor, L. I.).

Hygiene.—T. A. Storey, College of the City of New York.

Immunology.—Reuben Ottenberg, Mt. Sinai Hospital, New York City.

Medicine.—H. O. Mosenthal, Johns Hopkins University.

Neurology.—Frederick Tilney, Columbia University.

Paleontology.—W. K. Gregory, American Museum of Natural History (New York City).

Pathology.—A. J. Smith, University of Pennsylvania; H. G. Wells, University of Chicago.

Pediatrics.—L. E. La Fétra, Bellevue Hospital (New York City); O. M. Schloss, Columbia University.

Pharmacology and Therapeutics.—J. J. Abel, Johns Hopkins University; John Auer, Rockefeller Institute for Medical Research; R. A. Hatcher, Cornell University Medical College; C. C. Lieb, Columbia University; F. H. McCrudden, Robert B. Brigham Hospital (Boston); Carl Voegtlin, United States Public Health Service (Washington).

Physiology.—Russell Burton-Opitz, Columbia University; S. J. Meltzer, Rockefeller Institute for Medical Research.

Surgery.—A. V. S. Lambert, Columbia University; John Rogers, Cornell University Medical College.

Toxicology.—John Marshall, University of Pennsylvania.

Typhus Menacing World.—War on typhus with a view to preventing the spread of the dread malady from Poland, where 100,000 persons are down with the disease, to other countries of eastern and south-eastern Europe is planned by the League of Red Cross Societies of the World, the first great health work on behalf of humanity which the organization formed only three weeks ago, has set out to perform. News of anti-typhus plan, which is the result of a series of conferences between the Supreme Economic Council and Lieut. Gen. Sir David Henderson, director general of the League of Red Cross Societies, has reached American Red Cross Headquarters.

Reports from Poland show that thousands have died from lack of medical care and that conditions in Hungary and other parts of eastern Europe, due to the appearance of typhus, are such as to constitute a menace to the rest of the world. Surveys made on behalf of the Supreme Economic Council show that the disease is spreading rapidly and that it will take a vigorous campaign to check it before cold weather sets in. Added to the menace of typhus is the danger of a cholera epidemic in these countries, the peoples of which are still suffering from the shock of war and undernourishment.

The Supreme Economic Council has appointed a committee of British, French and Italian representatives to confer with representatives of the League of Red Cross Societies, the object of this conference being the preparation of plans that will be submitted to the governments of the countries of eastern Europe. The necessity for immediate action will be presented to these governments. For its own part the League of Red Cross Societies has addressed an appeal to its founder members, the Red Cross organizations of the United States, Great Britain, France, Italy and Japan, and to the Red Cross organizations of twenty-four other countries who have been invited to join the League, to hold themselves in readiness to participate in the campaign against typhus.

The division of duties between the League and the Supreme Economic Council has been arranged, it being agreed that the latter organization will place at the disposal of the League all the surplus medical and hospital supplies belonging to British and American armies and insure transportation of the same while the League will supply and maintain the personnel for the administration of the relief measures. The League of Red Cross Societies will also provide the best medical service and advice obtainable. In this connection the League will be in a position to use, immediately the anti-typhus plan receives governmental approval, the methods for combating typhus disclosed during the recent important conference at Cannes, where the world's leading physicians and public health experts were assembled.

In connection with the proposed campaign against typhus Lt. Gen. Henderson, director general of the League said:

"If the Red Cross League is charged with the serious responsibility of protecting public health in this crisis, the people of the various nations must realize that the fight is their own and that the League is acting as their instrument.

"The League will be put to the severest test at the very beginning of its existence. We believe that with the aid of governments, and with the aid of voluntary national societies supported by the people, we can control and limit the spread of this epidemic so that Europe will be saved from disaster that would sure follow the spread of the disease. The situation in eastern and southern Europe is too serious to be coped with by any single government or by any voluntary society. The Red Cross

League affords medium through which governments and voluntary societies can cooperate and by means of which efforts may be coordinated.

"The League has at its disposal the assistance of the most expert medical advisors, trained by practical experience in combatting typhus. It has already the help of the trained personnel of the American and the British Red Cross, both of which societies already have units in the field, and it can call for aid upon other Red Cross societies that are members of the League. It will be able to utilize under expert direction certain medical and other supplies now in Europe owned by the Allied governments and national voluntary societies. With these means at its disposal the League is prepared to undertake the strategical direction of the campaign.

"This emergency has come upon the League at the outset while it is still in process of organization, but the League has not felt that it should avoid responsibility. If the League is requested to undertake this work by the respective governments it will offer an opportunity to the people to show through their National Red Cross Societies their practical interest in common welfare. The future will depend upon the response made to that appeal. The League has no thought of over-riding national societies, on the contrary, it seeks to cooperate with them and to develop and stimulate them.

"The actual menace of typhus and cholera gives immediate opportunity to people to unite in performance of this urgent service for the world."

Personal.—Dr. E. Gerald Griffin (A. M. C., '01), for the last two years residing in Denver, Col., has resumed practice in Albany at 544 Madison avenue.

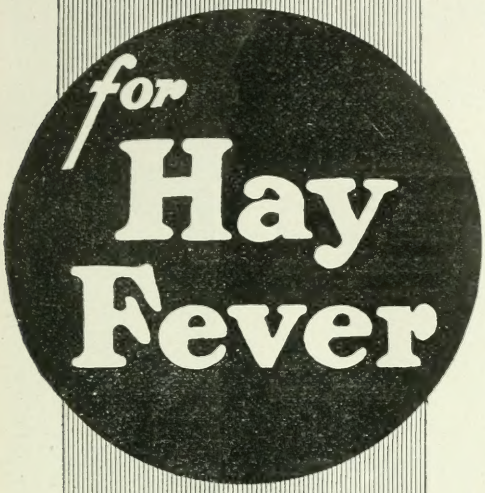
—Dr. George Warren Beebe (A. M. C., '07), has retired from active service in the army and will resume practice in Eau Claire, Wis.

—Dr. J. Lewi Bendell (A. M. C., '07), has returned from military service and has resumed the practice of general surgery at 178 State street, Albany, N. Y.

Died.—Dr. George H. Houghton (A. M. C., '82), died at the Champlain Valley Hospital, Plattsburgh, N. Y., June 15, 1919, after an illness of six weeks. Dr. Houghton enjoyed a large practice in Albany from the time of his graduation until his last illness .

—Dr. Frederic A. Williams (A. M. C., '92), died from the effects of an automobile accident on May 2, 1919, aged 49. Dr. Williams served on the staff of the Hudson River State Hospital at Poughkeepsie, N. Y., for two years, and settled in New York City in general practice in 1906, at 402 Hudson street. In April, 1918, he was appointed Medical Adviser of the New York State Insurance Fund, an office held at the time of his death.

—Dr. William J. Green (A. M. C., '98), died at his home in Saratoga Springs, N. Y., of acute Bright's disease, on May 27, 1919, aged 53.



Adrenalin Chloride Solution

For spraying the nose and pharynx (after dilution with four to five times its volume of physiologic salt solution).

Supplied in ounce bottles, one in a carton.

Adrenalin Inhalant

For spraying the nose and pharynx (full strength or diluted with three to four times its volume of olive oil).
Supplied in ounce bottles, one in a carton.

Pituitrin 0.

For spraying the nose and pharynx (after dilution with four to five times its volume of physiologic salt solution).
Supplied in ounce bottles, one in a carton.

Glaseptic Nebulizer

The most economical instrument for nebulizing the Adrenalin and Pituitrin preparations listed above. It atomizes down to the last drop.
Price, complete with throat-piece, $1.25.

Mixed Infection Phylacogen

For hypodermic or intravenous injection.

Bio. 595. In 10-mil (10-Cc.) bulbs, one in a package.

Bio. 597. In 1-mil (1-Cc.) bulbs, five in a package.

Ragweed Pollen Extract

For prophylaxis and treatment. (Administered hypodermically.)

Bio. 680. Five tubes, with scarifying needle, for diagnosis.

Bio. 682. Four 5-mil (5-Cc.) vials (No. 1, 10 units; No. 2, 100 units, and No. 3, 1000 units per mil; No. 4, diluent).

Bio. 681. Number 3 vial, 5 mils (5 Cc.), 1000 units per mil.

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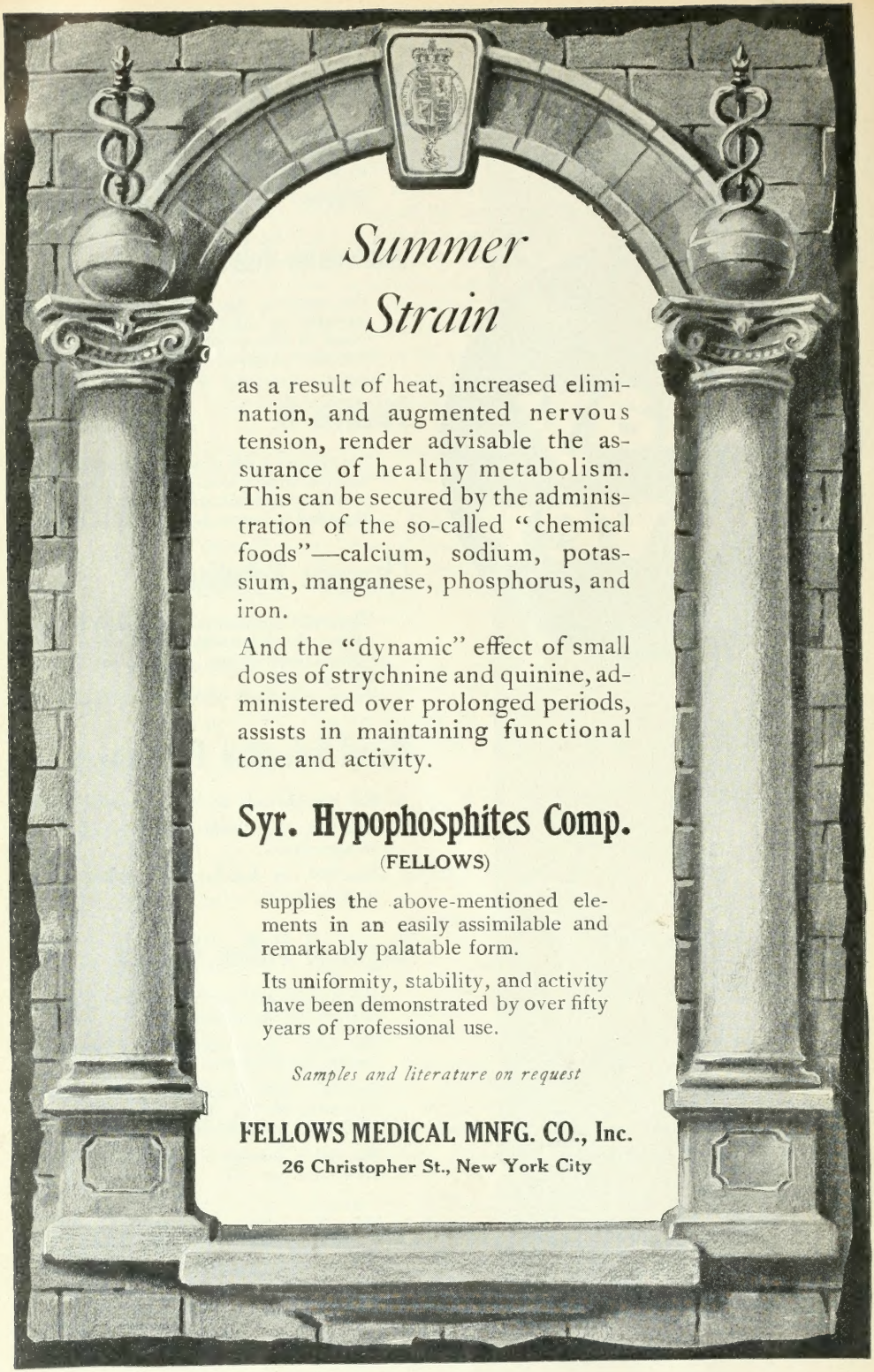
DETROIT



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